Agilent 7673 Autosampler Control Driver User Guide

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Publication Number BR501580
Revision C

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Introduction

This document describes the configuration of the Agilent Technologies 7673 Autosampler driver. It also explains how to build a control method for this driver, how to start and view a running acquisition and what actions are available during an analysis.

Installation and Configuration

Installing the Driver Software

To install the CompassCDS Drivers software, refer to the CompassCDS installation Guide.

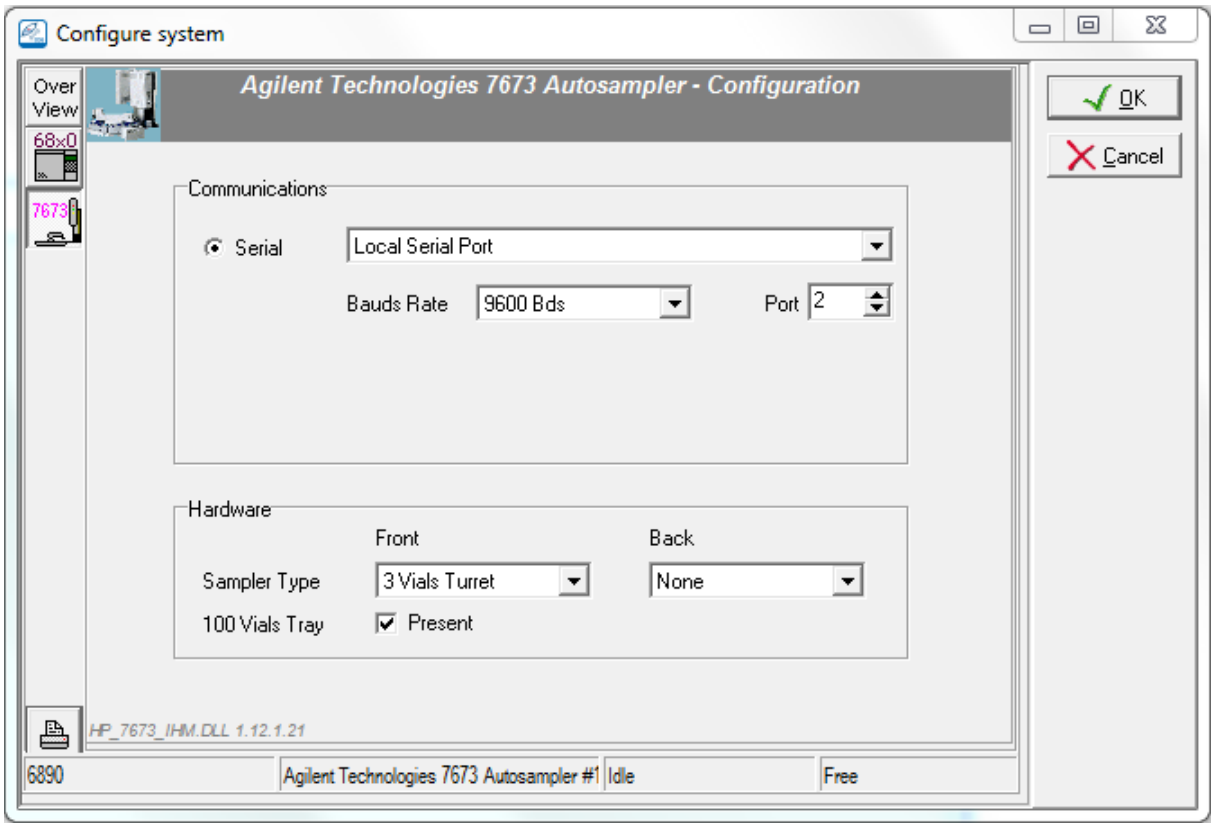
Configuring the Driver

The driver software configuration is done in the CompassCDS Configuration Manager when a new chromatographic system is created.

Configuring the Agilent 7673 Autosampler

Click on the

button corresponding to the Agilent 7673 Autosampler driver and the configuration screen appears:



Communication Parameter Group

Serial:

Choose Serial if the 7673 controller uses a serial communication. Select *Local Serial Port* if the autosampler is directly connected to the PC or the name of the STAR 800 & 850 MIB-interface used to connect the autosampler.

Baud Rate:

Choose 9600 Bds

Port:

Select the PC or STAR 800 & 850 MIB-interface Serial port number on which the autosampler will be connected.

NOTE: If you will use the Serial port installed in the MIB-interface, configure the STAR 800 & 850 MIB-interface before configuring the Agilent Technologies 7673 autosampler.

Hardware Parameter Group

Sampler Type:

Select the Front and Back Sampler Type. The available choices are: None, 3 Vials Turret and 8 Vials Turret.

Check Present If the chromatographic system is equipped with a 100 Vial Tray.

To save the configuration, accept the configuration of the system by clicking on the OK button. Then right click on the system name in the bottom part of the CompassCDS Configuration Manager screen. A pop-up menu appears: click on Stop. Then right click on the system name again, and click on Start.

NOTE: Once the system has been created and correctly configured, it must be associated to one or several projects in order to start some acquisitions. For more details about the creation and configuration of a system, refer to the CompassCDS Configuration Manager User Guide.

Press the button to print the current configuration.

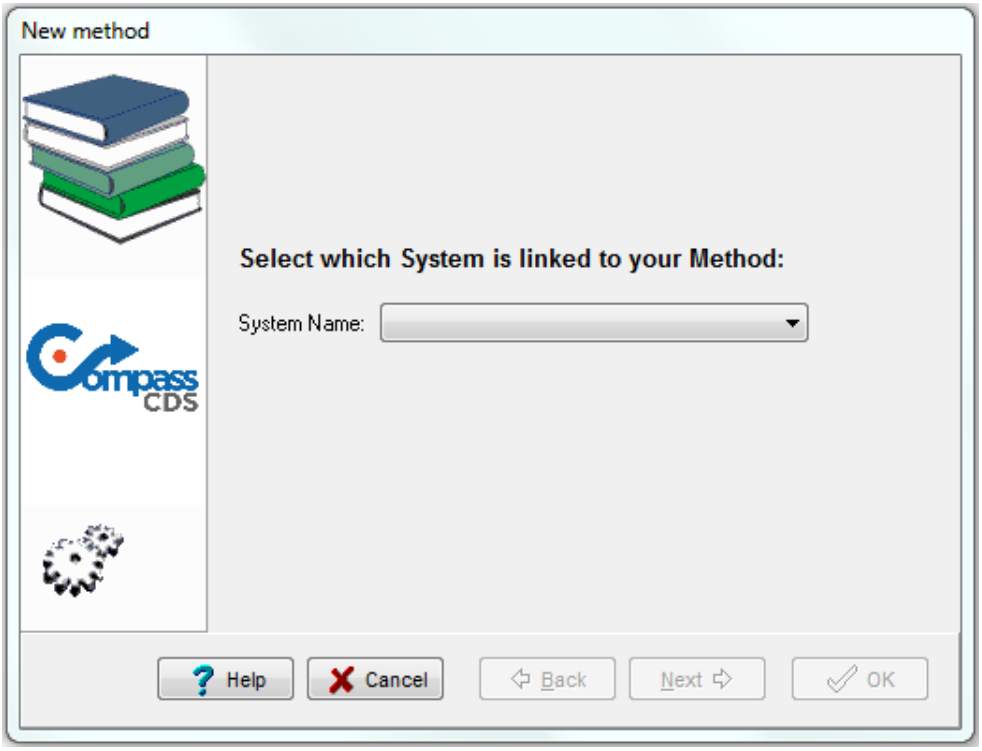
Building a Method

Creating a New Method

The method contains parameters for instrument control, data acquisition, chromatogram processing, and editing of final results. To initially set up a method, it is not necessary to define all of the sub-method sections; however, you must fill in the instrument control section prior to starting an acquisition.

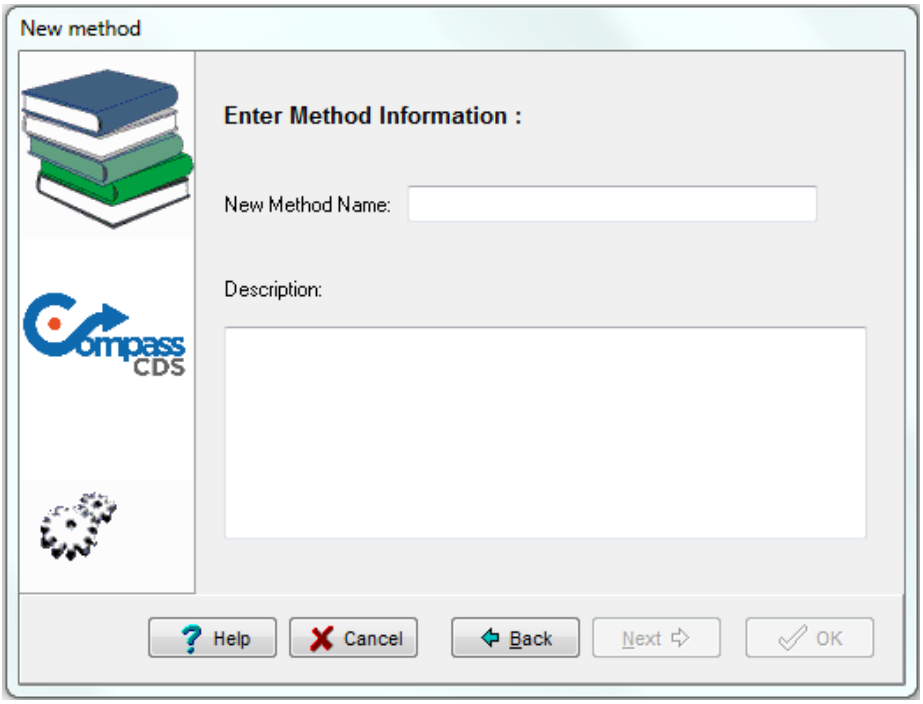
To create a new method, select the ***FILE / NEW METHOD*** option from the CompassCDS Chromatography Data System main menu.

A wizard guide will appear and provide assistance during the first steps of method creation:



Choose the system (chromatograph) associated with the method. A method is created for a particular system. When starting an acquisition, the name of the system that performs the acquisition must be correct, since method access is limited only to those methods associated with this system.

Once this field is completed, click on the Next button to move to the second step of the method creation:



Enter the *New Method Name* in the first field. In the *Description* field, enter information concerning the method (optional).

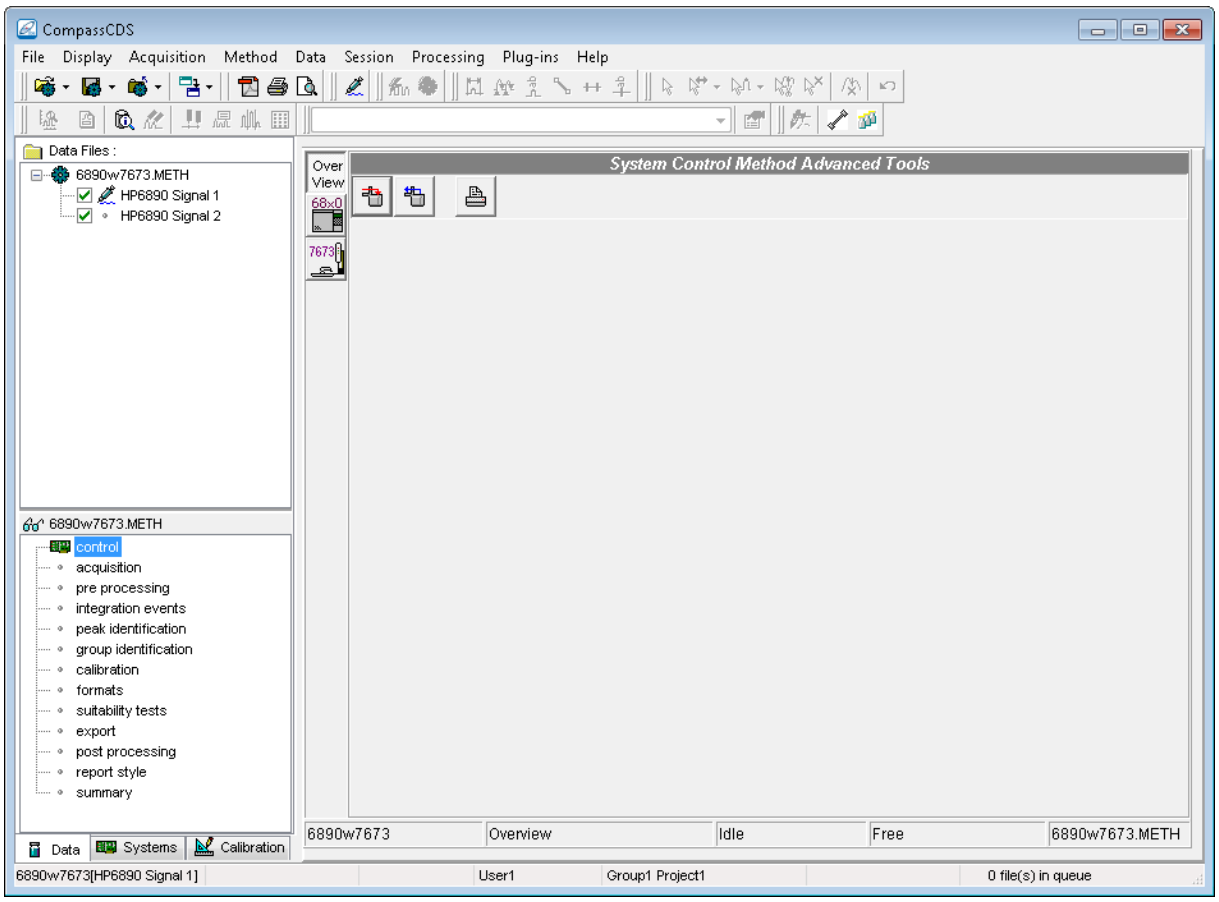
Once these two fields have been completed, click on the *OK* button. The new method is created and is opened with default parameters in the CompassCDS Chromatography Data System. The next step is the definition of each of the method sections.

The instrument control section must be defined in order to start an acquisition. In the following part of this guide, only the instrument control section for the Agilent 7673 Autosampler is detailed. Other parameters such as *Injection Volume*, *Vial* and *Rack* number may be necessary and are defined in the acquisition section.

NOTE: For more details about the programming of each method section, refer to the CompassCDS User Guide.

Control Method Section for the Agilent 7673 Autosampler

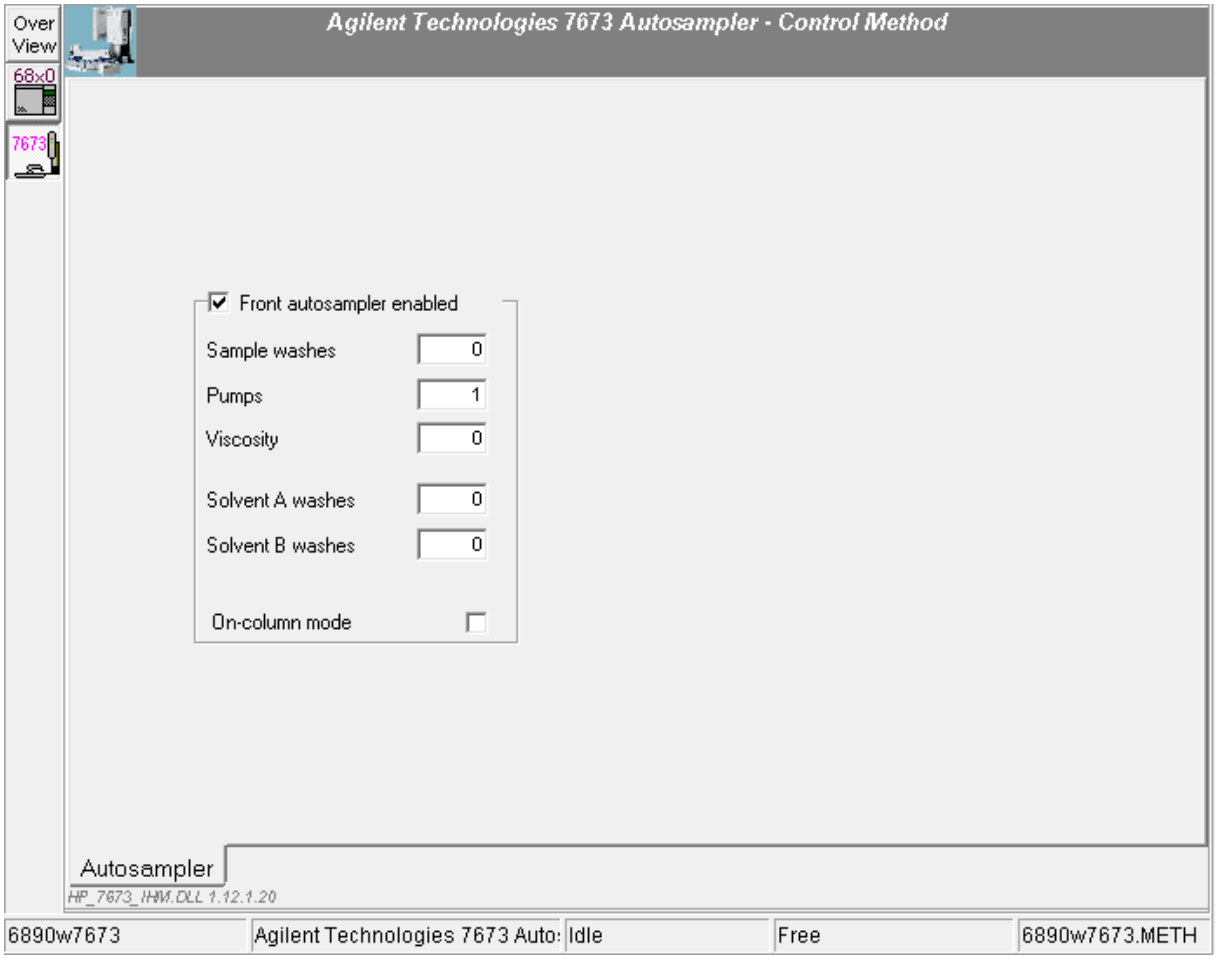
Once the new method is created, select the control section in the lower part of the browser. The following screen appears:



Click on the

button to display the Agilent 7673 Autosampler control method section.

Depending on the system configuration, the displayed window will contain one or two parameter groups. If only a front (or back) autosampler is configured, only the *Use Front* (or *Back*) *Autosampler* parameter group will be displayed. If both autosamplers are configured, the *Use Front Autosampler* and *Use Back Autosampler* parameter groups are displayed.



Check *Use Front (*and/or *Back) Autosampler* to take into account the autosampler parameters.

To inject manually for a short time, in the control section of the method, uncheck *Use Front (*and/or *Back) Autosampler*. Press on the start button of the GC after the manual injection.

In the *Sample Washes* field, enter the number of syringe washes with the sample, before injection.

In the *Pumps* field, enter the number of pumps before the injection (plunger strokes to avoid the formation of bubbles).

In the *Viscosity* field, enter a time (in seconds). During this time, the syringe plunger pauses between the pumping and the injection stroke. For viscous samples, the pause allows the sample to flow into the vacuum created in the syringe.

In the *Solvent Washes A/B*, enter the number of syringe washes with solvent A and/or B. Check the *On column* mode for on column injection.

NOTE: The volume that will be injected depends of the syringe size. Only five levels of injection volume can be programmed for this driver in the Acquisition sub-method part: 1, 2, 3, 4 and 5. These values represent the number of tenths of the syringe volume. For example, if the entered volume is 3 and the syringe volume is 10 µL, the injected volume will be 3 tenths of 10 µL = 3 µL. A physical turret option called Nanoliter allows the injection of smaller volume (refer to the Agilent manual to learn more about this option). Refer to the Appendix (Injection Volumes section) to see the correspondence between the programmed levels and the real injected volumes.

Transfer Line: Enter in this field the transfer line temperature.

Starting and Viewing an Acquisition

Quick Start and Sequence

Once the instrument control method has been correctly programmed, an analysis can be started. The next section briefly describes how to start an acquisition.

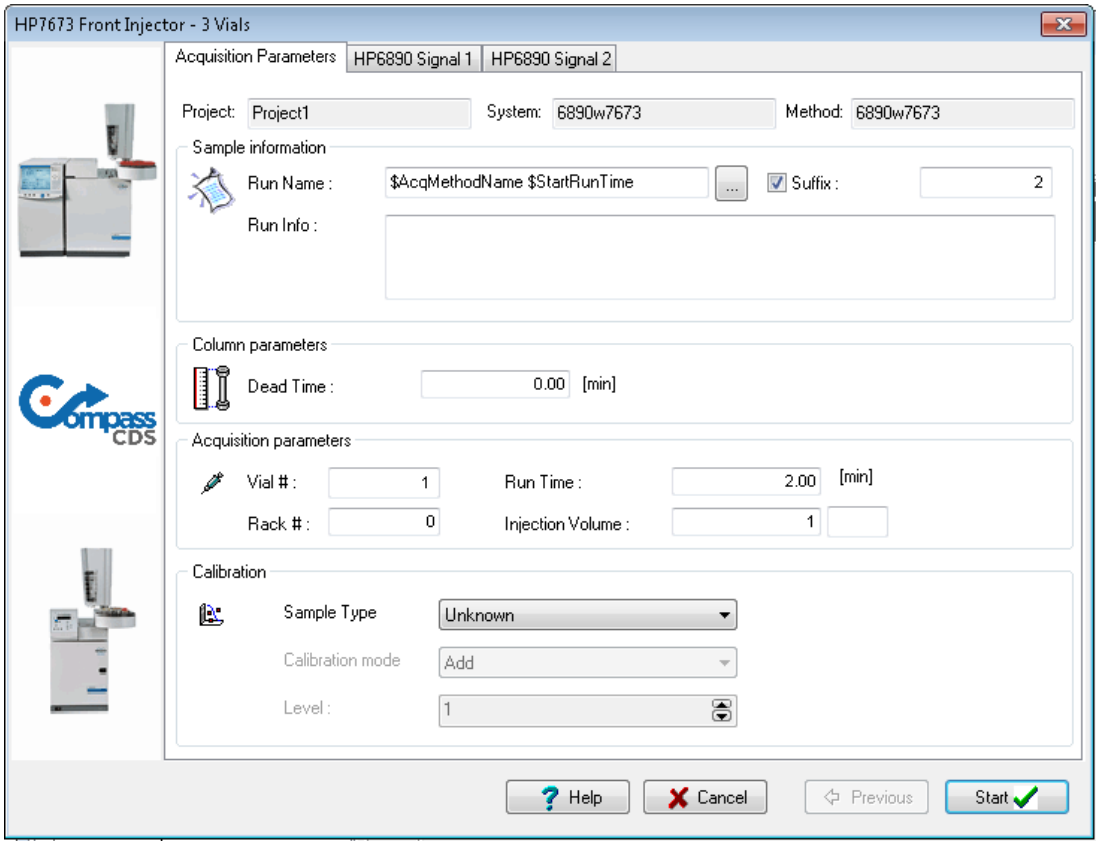
Quick Start (Single Acquisition)

Press the button.

In the Quick Start window, select the system, the method and optionally the project if connected in "All project" mode.

Press the OK button.

The following screen is displayed:



In the *Acquisition parameters* tab, required fields like the *Run Name*, the *Run ID* and the *Acquisition length* must be filled in before starting an analysis. Furthermore, if the system is equipped with an autosampler controlled by the CompassCDS Chromatography Data System, the *Injection Volume*, the *Vial* position and the *Rack* number (if required) must be entered.

Other parameters associated with each acquisition channel can be entered in the *Channel X* tab.

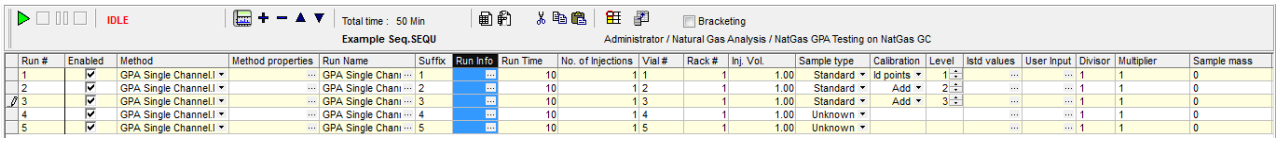
Click on the Start button to start the acquisition if the system is a single-injector system or click on the Next button if the system is a multiple injector system. In a multiple injector system, the same parameters entered for the first injector must be entered for the other injectors before starting the acquisition.

Sequence

To create a sequence, select the FILE / NEW SEQUENCE menu, and complete the displayed creation wizard screen (refer to the CompassCDS Chromatography Data

System User Guide), by entering the system name that will perform the analysis, the number of lines (corresponding to the number of samples), and the sequence name.

The sequence is displayed. Complete the sequence information columns (refer to the CompassCDS User Guide).


IDLE
Total time : 50 Min
Example Seq.SEQU
Bracketing
Administrator / Natural Gas Analysis / NatGas GPA Testing on NatGas GC
Run # | Enabled | Method | Method properties | Run Name | Suffix | Run Info | Run Time | No. of Injections | Vial # | Rack # | Inj. Vol. | Sample type | Calibration | Level | Istd values | User Input | Divisor | Multiplier | Sample mass
1 | GPA Single Channel.I | GPA Single Chani | 1 | 10 | 1 | 1 | 1 | 1.00 | Standard | Id points | 1 | 1 | 1 | 0
2 | GPA Single Channel.I | GPA Single Chani | 2 | 10 | 1 | 2 | 1 | 1.00 | Standard | Add | 2 | 1 | 1 | 0
3 | GPA Single Channel.I | GPA Single Chani | 3 | 10 | 1 | 3 | 1 | 1.00 | Standard | Add | 3 | 1 | 1 | 0
4 | GPA Single Channel.I | GPA Single Chani | 4 | 10 | 1 | 4 | 1 | 1.00 | Unknown | 1 | 1 | 0
5 | GPA Single Channel.I | GPA Single Chani | 5 | 10 | 1 | 5 | 1 | 1.00 | Unknown | 1 | 1 | 0

The *Method Name*, the *Run Name*, the *Run ID,* and the *Acquisition length* must be filled in before starting the analysis. All these parameters are automatically imported from the acquisition part if defined in the method.

Start the sequence by clicking on the button.

NOTE: For more details about how to start an acquisition, refer to the CompassCDS User Guide.

NOTE: The volume that will be injected depends of the syringe size. Only five levels of injection volume can be programmed for this driver in the Acquisition sub-method part: 1, 2, 3, 4 and 5. These values represent the number of tenth of the syringe volume. For example, if the entered volume is 3 and the syringe volume is 10 µL, the injected volume will be 3 10^{nth}= 3 µL. A physical turret option called *Nanoliter* allows the injection of smaller volume (refer to the Agilent manual to know more about this option). Refer to the Appendix (*Injection Volumes* section) to see the correspondence between the programmed levels and the real injected volumes.

Running Acquisition Status

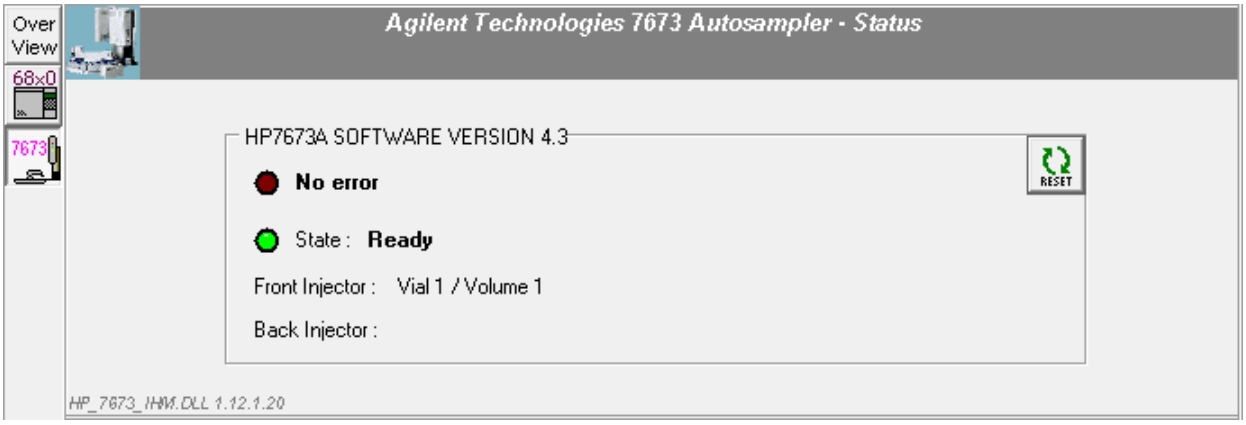
Viewing a Running Acquisition

To view a running acquisition, click on the *Systems* tab then select the running system. A window is activated which is composed of two parts: the running chromatogram and the status window where the driver modules are listed.

Status of the Agilent 7673 Autosampler

Click on the

button corresponding to the Agilent 7673 Autosampler driver and the Agilent Technologies 7673 Autosampler status screen will appear.



This is a read-only window.

The screen displays the state of the autosampler.

Information about the *Vial* and the *Volume* for the *Front* and *Back Injectors* are displayed.

NOTE: When the autosampler communicates with Compass, the firmware version is displayed above the *Communication Error* LED.

NOTE: If you are connecting by GPIB, a tray is configuring on your Autosampler and you stop the acquisition in prerun, the tray will continue its work (put vials in front and rear towel, then put back vials on the tray). If you are connecting by Serial communication, a tray is configuring on your Autosampler and you stop the acquisition in waiting for injection, the tray will stop its work immediately. If you launch the same method again the tray will begin by putting back vials on the tray. If you launch another method you should first manually put back vials on the tray otherwise you can have an ERROR TRAY issue.

Overview Window

Click on the

button: for this driver, nothing is displayed.